

From: [Kevin Burke](#)
To: [Kevin Burke](#)
Cc: [Kevin Burke](#)
Subject: FW: Cell Phones
Date: Friday, May 12, 2017 1:05:11 PM

On May 3, 2017, at 5:39 PM, Dayna Kully
<dayna@5thgenwireless.com> <<mailto:dayna@5thgenwireless.com>>> wrote:

Hello Kevin,

Right now, as I understand it, the technology planned for the TPV Towers is 4G. The next Generation of technology is 5G and that's expected in 2020. It's already being discussed and committed to by the major carriers in the US. I included a few articles below. The biggest implication is that the towers to support 5G will need to be denser than those for 4G. It's not exactly clear how this will impact each carrier but it's a fair question...

So, 5G is one technology that you'll definitely need to contend with. The other is potentially the convergence of Wi-Fi and Cellular (100% IP, which means 4G LTE +). The roadmap for convergence is being driven by the WBA (Wireless Broadband Alliance) with a standard called HotSpot2.0 (r2). The next iteration of the standard will converge cellular and Wi-Fi. The current HotSpot2.0 standard really makes Wi-Fi look like cellular (roaming between Wi-Fi networks in a manner similar to how cellular behaves today No need to re-authenticate, automatically connect and freely roam onto member networks, etc.). Smart Cities are endorsing this technology. San Jose, CA; NYC (with LinkNYC), etc. Not sure what impact this will have on Cell Towers per se but if the TPV has any outdoor Wi-Fi planned, you may want to take into consideration the ability to offload cellular to Wi-Fi to reduce dependency on Cellular. BTW, HotSpot2.0 is SECURE Wi-Fi from the device so there are some real advantages vs. what we know today as best efforts Wi-Fi which is inherently insecure.

<https://insidetowers.com/5g/>

<http://www.cio.com/article/3117705/cellular-networks/5g-could-require-cell-towers-on-every-street-corner.html>

<http://www.telecomramblings.com/2016/04/the-future-of-cell-towers-could-advancements-in-cellular-technology-make-cell-towers-as-we-know-them-obsolete/>

Not sure if this helps or not but I would be asking the carriers and the tower companies some tough questions and asking for some guarantees for technology refresh as part of your agreements.

Cheer,

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From: Kevin Burke [<mailto:kburke@paradisevalleyaz.gov>]
Sent: Wednesday, May 03, 2017 2:51 PM
To: Dayna Kully <dayna@5thgenwireless.com> <<mailto:dayna@5thgenwireless.com>>>
Subject: Cell Phones

Dayna,

I hope this email finds you well. We are continuing our discussion regarding cell services with the Council. I had one of the Councilmember ask me a question that I thought was right up your ally. Any ideas on how to answer this?

* Staff should be prepared to let Council know how long the existing technology for cell towers will (or is estimated to) be relevant. What new technology is coming and how that will effect the current cell towers in the Town.

Any ideas? Thanks

Kevin Burke
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